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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/605,208
Filing Date: September 15, 2003
Appellant(s): HERSCOVICI ET AL.

Ramraj Soundararajan
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 29, 2007 appealing from the Office action mailed May 25, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,085,186 A	CHRISTIANSON ET AL.	7-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

I. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

II. **Claims 1-19** are rejected under 35 U.S.C. **102(b)** as being anticipated by Christianson et al. (US 6,085,186 A), hereinafter "**Christianson**".

As per claims 1, 8, Christianson teaches a method and an article of manufacture for identify documents most relevant to a query comprising:

- "determining a query class for a received query based on statistical information regarding query terms of said received query and lexical affinities associated with

permutations of said query terms" at Col. 7 line 57 to Col. 8 line 20, Col. 9 lines 2-18, and Col. 14 lines 50-65;

- "said query class associated with a routing function and a ranking function" at Col. 7 lines 30-55;
- "said routing function capable of determining subsets of the collection that most likely include the most relevant documents" at Col. 7 line 57 to Col. 8 line 20;
- "and said ranking function capable of sorting the documents in terms of relevancy" at Col. 9 lines 2-18;
- "identifying a set of indices most relevant to said query" at Col. 8 lines 50-65;
- "identifying a set of documents related to said query based on said determined indices, said identification performed via passing said ranking function associated with said determined query class along with said query to each search engine that manages a determined index from a collection of relevant indices" at Col. 12 lines 15-30;
- "collecting results ranked based upon said ranking function and merging and sorting said collected results by relevancy" at Col. 12 lines 15-30;
- "returning a subset of the highest ranked documents as the documents most relevant to the query" at Col. 12 lines 30-35.

As per claims 2, 9, Christianson teaches the method and article of manufacture of claims 1, 8, wherein "said step for determining a query class further comprise:

- analyzing user profile data, user search context and history data, log file data, and index statistics, or other query related external data" at Col. 5 lines 12-32;
- "utilizing said analyzed data in determining a query class for said search query" at Col. 5 lines 12-32.

As per claims 3, 10, Christianson teaches the method and article of manufacture of claims 1, 8, wherein "said step for identifying a set of indices further comprises the step of using routing information obtained from applying said routing function associated with said query class to determined said set of indices" at Col. 8 lines 50-65.

As per claim 4, Christianson teaches the method of claim 1, wherein "said step of returning a subset of the highest ranked documents further comprises the following step: assigning each search result item a relevancy score, and returning a predetermined subset of results from said search results" at Col. 12 lines 35-65.

As per claims 5, 11, Christianson teaches the method and article of manufacture of claims 4, 8 wherein "said method additionally comprises the step of sorting search results by said relevancy score in decreasing order prior to returning said predetermined subset of results" at Col. 12 lines 25-35.

As per claim 6, Christianson teaches the method of claim 1, wherein "said method is implemented across networks" at Col. 6 lines 10-20.

As per claim 7, Christianson teaches the method of claim 6, wherein "said across networks element comprises any of, or a combination of, the following: wide are network (WAN), local are network (LAN), cellular, wireless, or the Internet" at Col. 6 lines 10-20.

As per claims 12, 17, Christianson teaches a method and article of manufacture for retrieving information comprising the step of:

- "receiving a query" at Col. 12 lines 4;
- "parsing said query and generating a set of query terms" at Col. 14 lines 49-65;
- "identifying statistical information regarding each of said query terms and different permutations of query terms" at Col. 9 lines 2-18;
- "identifying lexical affinities associated with said permutation of query terms" at Col. 9 lines 2-18;
- "classifying said query into a query category based upon results of step c and d" at Col. 8 lines 10-20;
- "identify a set of ranking parameters associated with query category" at Col. 9 lines 45-55;
- "identifying routing information associated with said query category" at Col. 9 lines 40-45;

- "issuing a query to a search engine by applying said identified ranking parameters and said identified routing information" at Col. 12 lines 15-35;
- "receiving and rendering search results from said search engine" at Col. 12 line 30-35.

As per claim 13, Christianson teaches the method of claim 12, wherein "said step of identifying statistical information additionally comprises the step of analyzing log data" at Col. 14 line 66 to Col. 15 line 65.

As per claim 14, Christianson teaches the method of claim 12, wherein "said step of identifying statistical information additionally comprises the step of analyzing user feedback" at Col. 12 lines 50-65.

As per claim 15, Christianson teaches the method of claim 12, wherein "said method is implemented across networks" at Col. 6 lines 10-20.

As per claim 16, Christianson teaches the method of claim 15, wherein "said across networks element comprises any of, or a combination of, the following: wide are network (WAN), local are network (LAN), cellular, wireless, or the Internet" at Col. 6 lines 10-20.

As per claim 18, Christianson teaches the method of claim 1, further comprising:

- "performing steps of a-d for each of a plurality of query classes" at Col. 12 lines 7-15;
- "weighting results from each search engine for each query class according to degree of probability to which the query is associated with each of the query class" at Col. 12 line 35 to Col. 13 line 25.

As per claim 19, Christianson teaches the method of claim 12 further comprising:

- "performing steps f-l for each of a plurality of query categories" at Col. 12 lines 7-15;
- "weighting results from each search engine for each query category according to a degree of probability to which the query is associated with each of the query categories" at Col. 12 line 35 to Col. 13 line 25.

(10) Response to Argument

REJECTION UNDER 35 U.S.C. § 102 (b)

Appellant's invention is related to automatic query routing by determining a query class for the query, the query class associated with a routing function capable of determining subsets of the collection that most likely include the most relevant documents" (Appellant's specification, paragraph [0011]).

Christianson teaches a query router for determining which information sources are relevant to a given query, and forwarding the query to the most relevant information sources (Col. 2 lines 44-47).

Appellant argued that Christianson does not teach **"determining a query class for a received query based on statistical information regarding query terms of said received query and lexical affinities associated with permutations of said query terms."** The examiner respectfully disagrees and traverses appellant's arguments.

First, Appellant argued that Christianson teaches "conceptual classes" but does not teach or suggest the "query class" of claims 1 and 8. On the contrary, Christianson teaches at Col. 14 lines 50-60 the step of assigning relevant concept (or "conceptual class") to query words, as reproduced below:

The preferred query router is based on the principle of **assigning relevant concepts** to information sources **and query words**….

…Further, **each word that can appear in possible queries is examined to determine which of the chosen concepts are relevant to the word**. Then, **upon receiving the words or keywords of a query, the concepts associated with these words are determined**, and then the information sources relevant to these concepts are found.

Christianson therefore clearly teaches the claimed "query class".

Second, Appellant argued that in Christianson, "the mapping of a query to "conceptual class" is done via a "hash function", and NOT based on "statistical information regarding query terms" AND "lexical affinities associated with permutations of said query terms." On the contrary, as seen in the text portion above, Christianson determines "conceptual class" associated with a query by examining each word of the query. Particularly, Christianson at Col. 9 lines 5-10, reproduced below, the step of determining the query class (i.e., information source's relevance) for a query by **counting the number of query words** (i.e. "statistical information regarding query terms".)

In an exemplary embodiment, for **queries requesting the presence either of all query words or of any query words**, the estimate is determined by scanning the page and **counting the number of query words actually present**, and then scaling the count so that the presence of all words results in the common maximum relevance value.

Christianson therefore teaches the query class are determined based on statistical information regarding query terms

Further, Christianson teaches at Col. 9 lines 10-17 the step for determining query class for a phrase by "subtracting from the common maximum a normalized sum of the square of the **distance** in the page of **each word of the phrase from its successor word in the phrase**" and "if the **phrase appears contiguously** in the page the **relevance is high**, whereas if the words of the phrase are widely separated on the page, the relevance is low", the relevant text portion is reproduced below:

> For queries requesting the presence of a phrase, the estimate is determined, for example, by subtracting from the common maximum **a normalized sum of the square of the distance in the page of each word of the phrase** from its successor word in the phrase. Thereby, if the **phrase appears contiguously** in the page the relevance is high, whereas if the words of the phrase are widely separated on the page, the relevance is low.

In view of appellant's specification at paragraph [0012] which defines **lexical affinities** as "terms that appear close to each other within a certain range", Christianson therefore anticipates the step of determining query class based on lexical affinities (i.e. distant between each word of the phrase and its successor word in the phrase") associated with **permutation of said query terms** (i.e., "combinations of these query terms", applicant's specification, paragraph [0029])

In addition, Christianson teaches at Col. 15 lines 19-65 a detailed algorithm to determining query class of a query based on statistical information and lexical affinities

associated with query terms, which clearly shows that Christianson does not simply use "hash function" to determining "conceptual class" as agued by appellant.

Independent 12 and 17 do not have the same scope as claims 1, 8. However, Appellant's arguments are similar the arguments of claims 1, 8 and therefore the Examiner's responds to claims 1, 8 are also applied.

In light of the foregoing arguments, the 35 U.S.C 102 rejection is hereby sustained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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SUPERVISORY PATENT EXAMINER